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09/925,613	08/09/2001	Attila Szepesvary	54948-315939	2976
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EXAMINER				
RUTTEN, JAMES D				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/925,613

Applicant(s)

SZEPESVARY ET AL.

Examiner

JAMES RUTTEN

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 8-13, 16-19, 21 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 8-13, 16-19, 21, and 23-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. This action is in response to Applicant's submission filed 12/15/08, responding to the 2/25/08 Office action which detailed the rejection of claims 1-3, 5, 8-13, 16-21, and 23-27. Claims 1, 8-10, 19, 21, 23-24, and 26-27 have been amended, and claim 20 has been canceled. Claims 1-3, 5, 8-13, 16-19, 21, and 23-27 remain pending in the application and have been fully considered by the examiner.

Response to Arguments/Amendments

2. Applicant's arguments, see page 8 filed 12/15/08, with respect to the rejection(s) of claim(s) 1-3, 5, 8-13, 16-21, and 23-25 under 35 U.S.C. § 103(a) have been fully considered and are persuasive. Applicants essentially argue that primary art of record Jennings does not teach or suggest "scanning a document object model (DOM) of the web-based application with the parser computer program to generate tokens." Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent Application Publication US 20020104068 A1 by Barrett et al.

3. Applicant's arguments filed 12/15/08 have been fully considered but they are not persuasive.

On page 7 filed 12/15/08, Applicants essentially argue that primary art of record Jennings does not teach or suggest new claim limitation "receiving, from a server and at a computer system, a web-based application for display in a web browser, the web-based application comprising one or more web pages." Applicants suggest that Jennings instead "teaches the generation of an application by an interactor, based on interface description documents" which

"are not web-based applications," and "do not comprise one or more web pages." However, this argument is not persuasive in view of the disclosure of Jennings at Fig. 2, and column 4 lines 35-47 and 60-61, and column 7 lines 15-20. These passages show that Jennings operates in a web-based environment, and utilizes web pages for distribution of web-based applications. Therefore, the argument is not persuasive.

On page 8 filed 12/15/08, Applicants argue that "Jennings teaches away from scanning the DOM of an application; instead, as quoted above, Jennings teaches that its interactor, unlike a web browser, builds its own DOM based on the description documents." However, it is not clear why building a DOM based on description documents constitutes a teaching away from further scanning of the DOM. Further scanning of the DOM is necessary at least in processing JavaScript directives which operate on the DOM in order to effect changes in the display of the document. The 12/19/08 Wikipedia entry for "Document Object Model" (http://en.wikipedia.org/wiki/Document_Object_Model) contains the following:

A web browser is not obliged to use DOM in order to render an HTML document. However, the DOM is required by JavaScript scripts that wish to inspect or modify a web page dynamically. In other words, the Document Object Model is the way JavaScript sees its containing HTML page and browser state.

Jennings further discloses processing JavaScript by the interactor. See at least column 5 lines 52-55. Thus, simply building a DOM does not preclude further scanning of the DOM. Therefore, this argument is not persuasive.

Further arguments are based on the arguments addressed above, and are treated accordingly.

Claim Objections

4. Claim 19 is objected to because of the following informalities: Markings notwithstanding, lines 8-9 are identical to lines 6-7. It is noted that the previous version of claim 19 lines 4-5 filed 12/6/07 contains the following language: "receiving a predefined grammar for a particular application." As such, the text in 8-9 does not comply with 37 CFR 1.121(c), as it contains text not found in the 12/6/07 version of the claims. Lines 6-7 of the current claim appear to be a first edit of the clause, while lines 8-9 appear to be a second edit based on lines 6-7. While the text in 8-9 does not comply with 37 CFR 1.121(c), the intent appears clear and will be interpreted, in light of the amendment to claim 1, as providing only the text from lines 8-9. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3, 5, 8-13, 16-19, 21, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,717,593 to Jennings (hereinafter "Jennings"), in view of U.S. Patent Application Publication US 20020104068 A1 by Barrett et al. ("Barrett") in view of "Compilers: Principles, Techniques, and Tools" by Aho et al. (hereinafter "Aho").

In regard to claim 1, Jennings teaches that the interactor parses the description documents of an interface into elements and reflects them in the object model to form an instance representing the interface, downloads the objects corresponding to the reflected elements, registers their interfaces in the object model instance to make them accessible by the elements, and invokes execution of each downloaded object with the corresponding element to render the element. (E.g. see Abstract and associated text). Jennings further discloses the standard use of XML as including utilization, by web programmers, of a Document Object Model (DOM) to "create and build XML documents, navigate their structure, and add, modify, or delete elements and content" (see column 5 lines 30-50). Jennings discloses defining a user interface in terms of an object model using XML (see column 5 lines 52-55). Jennings discloses a method for identifying user interface (UI) objects in a markup-language stream, the method comprising the steps of:

receiving, from a server and at a computer system, a web-based application for display in a web browser, the web-based application comprising one or more web pages;

See Fig. 2, and column 4 lines 35-47 and 60-61:

FIG. 2 shows a communications system that implements a second illustrative example of the invention. The system comprises one or more **servers** 210 and one or more **clients** 200 interconnected by a communications network 208. Network 208 is illustratively the Internet or the **World Wide Web**, and communications between clients 200 and server 210 are effected via hypertext transfer protocol (HTTP) transfers 206 through network 208. Clients 200 are stored-program-controlled machines, such as personal computers, workstations, personal digital assistants, or intelligent telephones, each comprising a processor 202 and a memory 201 storing data for use and programs for execution by processor 202. These programs may include a **Web browser**.

...

Users access **applications** 120 via clients 200.
[emphasis added]

Also see column 7 lines 15-20, e.g. "The received document, expressed in **hypertext mark-up language (HTML) with JavaScript inserts**, is parsed by an HTML parser and a JavaScript parser into HTML and JavaScript elements" [emphasis added]. The html document is regarded as at least one "web page."

receiving a predefined grammar for the web-based application; See column 8 lines 53-58 for a discussion of an XML parser which parses a document into XML elements. Note that a predefined grammar is inherent in such parsing, otherwise the parser would not know be able to recognize an XML element. Jennings also implies grammars for particular applications. See column 2 lines 53-57.

...a parser computer program based on the predefined grammar... E.g. see FIG. 7 step 401 and associated text, e.g. col. 7:35-65.

scanning a document object model (DOM) of the web-based application with the parser computer program...; E.g. see FIG. 16 and associated text, e.g. see col. 7:35-52. Jennings does not expressly disclose: scanning the DOM *to generate tokens*. However, Barrett discloses generating tokens using a DOM. See at least paragraph [0101]: "After tokenization, the following token stream will have been generated from the DOM model of FIG. 10..." It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Jennings's application with Barrett's token generation in order to provide a basis for further development of the application as suggested by Barrett (see paragraph [0097]).

parsing <the tokens> with the parser computer program to identify at least one graphical element in the web-based application e.g. see col. 7 lines 20-25 and 42-44, also see col. 7 lines 29-32:

The **parsers** transform the hierarchy of HTML tags in the source document into a form that the underlying layout engine requires (the target form). The browser reflects the information into an object hierarchy called the document object model (DOM) to create instances of DOM class objects that correspond to the elements. The DOM may comprise globally available objects as well as user-defined objects (e.g., plug-ins). A portion of an illustrative browser's DOM showing objects and their hierarchies is shown in FIG. 15. **Instantiated objects are given to a layout manager, which uses them to implement what is displayed on the screen,** including input elements like buttons, radio buttons, and text entry. [emphasis added]

Note in order to display graphical elements, they must be parsed and identified, otherwise a button would be indistinguishable from text entry or other graphical elements.

and outputting one or more UI objects that correspond to the at least one graphical element in the web-based application. See column 7 lines 32-34:

Instantiated objects are given to a layout manager, which uses them to implement what is displayed on the screen, including input elements like buttons, radio buttons, and text entry.

Jennings does not expressly disclose *automatically generating* a parser computer program based on the predefined grammar using an automated parser generator tool. However, in an analogous environment, Aho teaches the well known method of using a parser generator tool to automatically generate a parser based on a predefined grammar. See Section 4.9, especially Fig. 4.55:

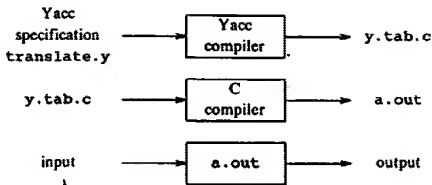


Fig. 4.55. Creating an input/output translator with Yacc.

Note that the grammar is represented as the “Yacc specification” and the parser is represented as “a.out”. It is also noted that Applicant’s originally filed specification also describes this “well known parser generator” in paragraph 2 on page 10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Aho’s teaching of a parser generator with Jennings parser. One of ordinary skill would have been motivated to use a well known tool to facilitate the construction of a parser in order to determine if source code is syntactically well formed (See Aho page 159, bullet two, and the 1st paragraph in section 4.9 on page 257).

As per claim 2, the rejection of claim 1 is incorporated and further Jennings teaches: “*wherein said markup-language stream drives a markup-language-based browser application, and wherein the scanning step includes scanning the DOM generated by a browser that displays that application.*” (E.g. see col. 7:35-52).

As per claim 3, the rejection of claim 1 is incorporated and further Jennings teaches: “*wherein the scanning step includes identifying elements of the DOM by traversal thereof.*” (E.g. see FIG. 16 and associated text, e.g. see col. 7:53-57).

As per claim 5, the rejection of claim 3 is incorporated and further Jennings teaches: “*wherein the scanning step includes generating one or more tokens for each scanned DOM element.*” (E.g. see col. 7: 7:42-45).

As per claim 8, the rejection of claim 1 is incorporated. Jennings further teaches: “*wherein the at least one UI objects comprises one of a user input field (E.g. see col. 7:31-32, text entry and see FIG. 15, block “Password” and associated text), a text field (E.g. see col. 7:31-32, text entry and see FIG. 15, block “Text” and associated text), a metatag (E.g. see FIG. 4 and associated text, e.g. see col. 5:47-50, and col. 7:45-50), unprintable markup-language (E.g. see FIG. 15, block “Hidden” and associated text), or an in-line image (E.g. col. 7:35-40 and see FIG. 15, block “Image” and associated text).*”

As per claim 9, the rejection of claim 1 is incorporated and further Jennings teaches: “*wherein the scanning and parsing steps are adapted to identify UI objects that correspond to elements displayed in the web-based application.*” (E.g. see FIG. 16 and associated text, e.g. see col. 7:35-52).

As per claim 10, the rejection of claim 1 is incorporated and further Jennings teaches: “*grouping the tokens into syntactic structures that identify items displayed by the web-based application.*” (E.g. see col. 7:20-25).

As per claim 11, the rejection of claim 10 is incorporated and further Jennings teaches: “*wherein said step of grouping comprises identifying similarly formatted markup-language elements based on their markup-language attributes such as classname, font size, style, tag color, and size.*” (E.g. see col. 5:17-29, style sheet).

As per claim 12, the rejection of claim 1 is incorporated and further Jennings teaches: “*wherein said at least one object comprises a name (E.g. see col. 6:1-3), content (E.g. see col. 6:1-3, value), a shape (E.g. see col. 5:64), or a location (E.g. see col. 6:3-5).*”

In regard to claim 13, the above rejection of claim 1 is incorporated. All further limitations have been addressed in the above rejection of claim 1.

In regard to claim 16, the above rejection of claim 1 is incorporated. Jennings does not expressly disclose a LALR(1) parser. However, Aho teaches that Yacc is a LALR parser. See paragraph 1 in section 4.9 on page 257.

In regard to claim 17, the above rejection of claim 1 is incorporated. Jennings does not expressly disclose a LR(1) parser. However, Aho teaches that Yacc is a LR parser. See paragraph 1 on page 216.

As per claim 18, the rejection of claim 1 is incorporated and further Jennings teaches: "*wherein the markup language is any of HTML,*" (E.g. see col. 7:16-20).

As per Claim 19, Jennings discloses a digital data processing system. See Figure 2. All further limitations have been addressed in the above rejection of claim 1.

As per claim 21, the rejection of claim 20 is incorporated and is rejected for the same reason set forth in connection with the rejection of claim 12.

As per claim 23, the rejection of claim 19 is incorporated and further Jennings teaches: "*wherein said tokens are interpreted according to the predefined grammar to identify and distinguish among UI objects of the web-based application's display.*" (E.g. see FIG. 16 and associated text, e.g. see col. 7:35-65).

As per claim 24, the rejection of claim 19 is incorporated and is rejected for the same reason set forth in connection with the rejection of claim 8.

As per claim 25, the rejection of claim 19 is incorporated and is rejected for the same reason set forth in connection with the rejection of claim 18.

7. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jennings, Barrett and Aho as applied to claims 1 and 19 above, and further in view of U.S. Patent 5,933,140 to Strahorn et al. (hereinafter "Strahorn").

In regard to claim 26, the above rejection of claim 1 is incorporated. The cited art of claim 1 does not expressly disclose: *providing context based help based at least in part on the at least one graphical element in the web-based application*. However, Strahorn teaches context-based help based upon a particular portion of the application. See Fig. 3 and column 3 lines 12-14, and column 4 lines 38-42. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Strahorn's context based help with Jennings' parsing of graphical elements in order to overcome the limitations of conventional help facilities in a web page as suggested by Strahorn (see column 1 lines 50-53).

In regard to claim 27, the above rejection of claim 19 is incorporated. The cited art of claim 19 does not expressly disclose the features of claim 27. However, all further limitations have been addressed in the above rejection of claim 26, and would be obvious for the same reasons.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES RUTTEN whose telephone number is (571)272-3703. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571)272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. Derek Rutten/
Examiner, Art Unit 2192